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Application No. 10/518151
Reply to Action dated 02/20/2008
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REMARKS

Claim 1 has been revised and is supported by, for example, Fig. 1 and Table 1 on page 6 in the Specification. Claim 4 has been cancelled without disclaimer or prejudice. Claims 6 and 8 are new and are supported by, for example, original claim 1, Fig. 1, and Table 1 in the Specification. Claims 5, 7, and 9 are new and supported by, for example, original claim 4, Fig. 2, and lines 1-8 of page 8 in the Specification. There is no new matter. Claims 1-3 and 5-9 are pending. Applicant respectfully request favorable reconsideration and reexamination of this application.

Claim Rejections - 35 U.S.C. § 103

Claims 1-4 were rejected under 35 U.S.C. 103(a) as being unpatentable over Spanjers et al. (US 2002/0006352). The rejection states that Spanjers et al. teaches Al-Mg alloy products with composition overlapping the ranges of claims 1 and 4. Applicants do not concede the correctness of the rejection.

Spanjers et al. does not teach an alloy with composition overlapping the ranges of, for example, Ti and Zr. Spanjers et al. teaches an alloy having "in weight percent, Mg 2.7-6.0, Mn 0.4-1.4, Zn 0.10-1.5, Zr 0.3 max., V 0.3 max., Sc 0.3 max., Ti 0.2 max., Fe 1.0 max., Si 1.4 max., balance aluminum and inevitable impurities" (Abstract). Spanjers et al. teaches that the "preferred level of Zr is in the range of 0.05 to 0.25%, and more preferably 0.06-0.16%" (paragraph [0043]). Spanjers et al. explicitly states that Zr above 0.3% does not "have any further advantages" (paragraph [0043]). Further, Spanjers et al. teaches that "maximum for Ti addition is 0.2%, and where a more preferred range is of 0.01 to 0.14%" (paragraph [0047]). Therefore, Spanjers et al. explicitly teaches that Ti must be no more than 0.2 wt% in the alloy and that there is no benefit to adding more than 0.3% of Zr in the alloy and accordingly sets the maximum limit of Zr at 0.3%.

In contrast, claim 1 requires a sum (Ti+Zr) of the amounts of Ti and Zr added of greater than 0.5 wt %, and a ratio (Ti/Zr) of the amounts of Ti and Zr added of at least 0.3 but not more than 2. Accordingly, claim 1 requires the following two conditions:

- (1) $Ti + Zr > 0.5 \text{ wt } \%$
- (2) $0.3 \leq (Ti / Zr) \leq 2.0$

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From conditions (1) and (2) above, it is clear that the wt % of Ti cannot be 0, and also that the wt % of Zr cannot be 0. Further, from condition (1), it is clear that when $Ti \leq 0.2$ wt %, Zr must be > 0.3 wt %. Further, from condition (1), it is clear that when $Zr \leq 0.3$ wt %, Ti must be > 0.2 wt %. Further, conditions (1) and (2) do not allow for both $Ti \leq 0.2$ wt % and $Zr \leq 0.3$ wt %.

Accordingly, the alloy composition according to claim 1 and the alloy composition as taught in Spanjers et al. do not overlap for at least the above reasons. Further, claim 1 requires wt % of particular elements that Spanjers et al. explicitly teaches against having. Accordingly, claim 1 is not obvious in view of Spanjers et al. Claim 1 is patentable over Spanjers et al. Claims 2-3 and 5 are also patentable for at least the same reasons as claim 1 from which they depend. Further, regarding claim 2, Komazaki (US 2002/0141896) does not remedy the deficiencies of Spanjers et al. Applicants respectfully request a favorable reexamination and reconsideration of the claims.

Claim 4 has been cancelled making this rejection moot against it. Applicants do not concede the correctness of the rejection.

Regarding the new claims 6-9, claims 6 and 7 require an alloy including $Ti > 0.2$ wt %. Further, claims 8 and 9 require an alloy including $Zr > 0.3$ wt %. As stated above in regard to claim 1, Spanjers et al. expressly teaches against these features. Accordingly, for at least the reasons stated above, claims 6-9 are patentable over Spanjers et al. Applicants respectfully request a favorable reexamination and reconsideration of the claims.

In view of the above, early issuance of a notice of allowance is solicited. Any questions regarding this communication can be directed to the undersigned attorney, Curtis B. Hamre, Reg. 29,165, at (612)455-3802.



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Respectfully submitted,

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By:

A handwritten signature in black ink that reads "Curtis B. Hamre".

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